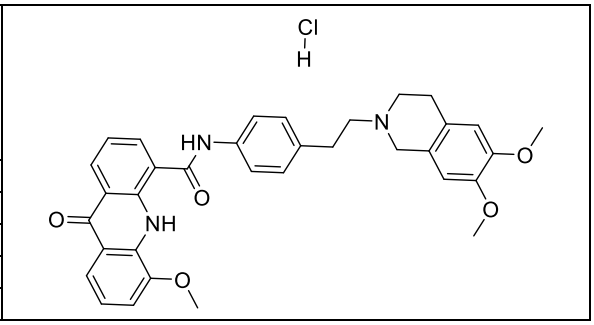
Product data sheet

MedKoo Cat#: 201190 Name: Elacridar HCl CAS#: 143851-98-3 (HCl) Chemical Formula: $C_{34}H_{34}ClN_3O_5$ Molecular Weight: 600.11	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Elacridar, also known as GF120918A, is a P-glycoprotein (P-gp) inhibitor, and has been used both in vitro and in vivo as a tool inhibitor of P-glycoprotein (Pgp) to investigate the role of transporters in the disposition of various test molecules. In vitro, GF120918A demonstrated high plasma protein binding across species, although a definitive protein binding evaluation was precluded by poor recovery, particularly in buffer and in mouse, rat, and dog plasma. GF120918A did not demonstrate potent inhibition of several human cytochrome P450 enzymes evaluated in vitro, with IC(50) values well above concentrations anticipated to be achieved in vivo. Together, these data confirm the utility of GF120918A as a tool P-glycoprotein inhibitor in preclinical species and offer additional guidance on preclinical dose regimens likely to produce P-glycoprotein-mediated effects.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	5	8.33

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.67 mL	8.33 mL	16.66 mL
5 mM	0.33 mL	1.67 mL	3.33 mL
10 mM	0.17 mL	0.83 mL	1.67 mL
50 mM	0.03 mL	0.17 mL	0.33 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Wong S, Doshi U, Vuong P, Liu N, Tay S, Le H, Kosaka M, Kenny JR, Li AP, Yan Z. Utility of Pooled Cryopreserved Human Enterocytes as an In vitro Model for Assessing Intestinal Clearance and Drug-Drug Interactions. Drug Metab Lett. 2018;12(1):3-13. doi: 10.2174/1872312812666171213114422. PMID: 29237391.

2. Hyafil F, Vergely C, Du Vignaud P, Grand-Perret T. In vitro and in vivo reversal of multidrug resistance by GF120918, an acridonecarboxamide derivative. Cancer Res. 1993 Oct 1;53(19):4595-602. PMID: 8402633.

In vivo study

1. Sane R, Agarwal S, Elmquist WF. Brain distribution and bioavailability of elacridar after different routes of administration in the mouse. Drug Metab Dispos. 2012 Aug;40(8):1612-9. doi: 10.1124/dmd.112.045930. Epub 2012 May 18. PMID: 22611067; PMCID: PMC3400790.

7. Bioactivity

Product data sheet

Biological target:

Elacridar (GF120918, GW120918, GG918, GW0918) is a potent P-gp (MDR-1) and BCRP inhibitor.

In vitro activity

Elacridar, a P-gp inhibitor, suppressed metabolite formation in enterocytes for loperamide, a substrate of CYP3A4 and P-gp, suggesting that enterocytes in suspension do not have active P-gp efflux functions, and the suppression of metabolism in enterocytes is probably caused by inhibition of CYP3A4/5 by elacridar.

Reference: Drug Metab Lett. 2018;12(1):3-13. http://www.eurekaselect.com/158255/article

In vivo activity

Friend leukemia virus strain B mice were administered 100 mg/kg elacridar either orally or intraperitoneally. The absolute bioavailability of elacridar after oral or intraperitoneal dosing was determined with respect to an intravenous dose of 2.5 mg/kg. At these doses, the absolute bioavailability was 0.22 for oral administration and 0.01 for intraperitoneal administration. The terminal half-life of elacridar was approximately 4 h after intraperitoneal and intravenous administration and nearly 20 h after oral dosing. The brain-to-plasma partition coefficient (Kp,brain) of elacridar increased as plasma exposure increased, suggesting saturation of the efflux transporters at the blood-brain barrier. The Kp,brain after intravenous, intraperitoneal, and oral dosing was 0.82, 0.43, and 4.31, respectively. The low aqueous solubility and high lipophilicity of elacridar result in poor oral absorption, most likely dissolution-rate-limited. These results illustrate the importance of the route of administration and the resultant plasma exposure in achieving effective plasma and brain concentrations of elacridar and can be used as a guide for future studies involving elacridar administration and in developing formulation strategies to overcome the poor absorption.

Reference: Drug Metab Dispos. 2012 Aug;40(8):1612-9. https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/22611067/